Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) An optical system comprising a first optical unit ~~(10)~~ and a first sensor unit ~~(18)~~ for sensing electromagnetic radiation, wherein the optical system is arranged such that incident electromagnetic radiation that originates from ~~some~~ a scene ~~(12)~~ outside of the optical system can reach the first sensor unit ~~(18)~~ by passing via the first optical unit ~~(10)~~ and by following a beam path ~~(20)~~ from the first optical unit ~~(10)~~ to the first sensor unit ~~(18)~~, ~~characterised in that~~ wherein the optical system ~~also~~ further comprises a micromirror matrix unit ~~(16)~~, which comprises a ~~large number~~plurality of micromirror elements and which is arranged in ~~said~~the beam path ~~(20)~~, wherein the micromirror matrix unit ~~(16)~~ is ~~arranged to be able~~operable to be set in at least a first and a second state, wherein in ~~said~~the first state the micromirror matrix unit ~~(16)~~ reflects ~~said~~the incident electromagnetic radiation which reaches the micromirror matrix unit ~~(16)~~ from the first optical unit ~~(10) such~~so that ~~this~~ the electromagnetic radiation reaches the first sensor unit ~~(18)~~, wherein in ~~said~~the second state the micromirror matrix unit ~~(16)~~ reflects ~~said~~the incident electromagnetic radiation which reaches the micromirror

matrix unit ~~(16)~~ from the first optical unit ~~(10) such~~so that ~~this~~ the electromagnetic radiation does not reach the first sensor unit ~~(18)~~.

2. (currently amended) An optical system according to claim 1, wherein the first sensor unit ~~(18)~~ comprises a ~~large number~~plurality of sensor elements and is arranged to be positioned in an image plane in the optical system, which image plane is ~~arranged to be able~~operable to constitute an image plane for ~~said~~the scene ~~(12)~~.

3. (currently amended) An optical system according to claim 2, wherein ~~the first sensor unit (18) is such that said~~the sensor elements are arranged as a two-dimensional array of sensor elements and wherein the optical system is constructed as a staring system.

4. (currently amended) An optical system according to claim ~~2 or~~ 3, wherein ~~said~~the image plane, in which the first sensor unit ~~(18)~~ is positioned, is arranged in the optical system ~~such~~ so that it constitutes an image plane for ~~said~~the scene ~~(12)~~ when ~~said~~the scene ~~(12)~~ is ~~positioned~~ located at such a ~~large~~ distance from the optical system that rays from a point in ~~said~~the scene ~~(12)~~ reach the first optical unit ~~(10)~~ as at least substantially parallel rays.

5. (currently amended) An optical system according to ~~any of the preceding claims~~claim 1, wherein the first sensor unit ~~(18) is arranged~~is operable to sense radiation within the infra-red wavelength range.

6. (currently amended) An optical system according to ~~any of the preceding claims~~claim 1, further comprising a second sensor unit ~~(26) for sensing~~operable to sense electromagnetic radiation and arranged ~~such~~ so that when the micromirror matrix unit ~~(16)~~ is set in a state which is different from ~~said~~the first state, the micromirror matrix unit ~~(16)~~ reflects ~~said~~the incident electromagnetic radiation which reaches the micromirror matrix unit ~~(16)~~ from the first optical unit ~~(10)~~ ~~such~~so that this electromagnetic radiation reaches the second sensor unit ~~(26)~~.

7. (currently amended) An optical system according to claim 6, wherein the micromirror matrix unit ~~(16)~~ is in ~~said~~the second state when it is set such that the incident electromagnetic radiation reaches the second sensor unit ~~(26)~~.

8. (currently amended) An optical system according to claim ~~6 or~~ 7, wherein the second sensor unit ~~(26)~~ is of another kind than the first sensor unit ~~(18)~~, such that the second sensor unit ~~(26)~~ is less disposed to be destroyed by electromagnetic radiation than the first sensor unit ~~(18)~~.

9. (currently amended) An optical system according to ~~any of the claims 6-8~~claim 8, wherein the second sensor unit ~~(26)~~ is a quadrant detector.

10. (currently amended) An optical system according to ~~any of the claims 6-9~~claim 9, wherein the second sensor unit (26) is arranged in the optical system ~~such~~ so that it is not ~~arranged~~ in an image plane for ~~said~~the scene ~~(12)~~, when ~~said~~the scene ~~(12)~~ is ~~positioned~~ located at such a ~~large~~ distance from the optical system that rays from a point in ~~said~~the scene ~~(12)~~ reach the first optical unit ~~(10)~~ as at least substantially parallel rays.

11. (currently amended) An optical system according to ~~any of the claims 6-10~~claim 10, arranged to prevent ~~that~~ incident electromagnetic radiation from ~~said~~the scene ~~(12)~~ ~~is~~ being reflected back to ~~this~~ the scene from the second sensor unit ~~(26)~~.

12. (currently amended) An optical system according to claim 11, further comprising an optical isolator ~~(30)~~ in the beam path between the first optical unit ~~(10)~~ and the second sensor unit ~~(26)~~.

13. (currently amended) An optical system according to ~~any of the preceding claims~~claim 1, comprising at least one reference source ~~(22)~~ for emitting electromagnetic radiation of a known kind, wherein ~~this~~ the reference source ~~(22)~~

is arranged ~~such~~ so that electromagnetic radiation from the reference source ~~(22)~~ reaches the first sensor unit ~~(18)~~ when the micromirror matrix unit ~~(16)~~ is set in a state which differs from ~~said~~the first state.

14. (currently amended) An optical system according to claim 13, wherein the reference source ~~(22)~~ is arranged ~~such~~ so that electromagnetic radiation from the reference source ~~(22)~~ reaches the first sensor unit ~~(18)~~ when the micromirror matrix unit ~~(16)~~ is set in ~~said~~the second state.

15. (currently amended) An optical system according to ~~any of the preceding claims~~claim 14, further comprising a control unit ~~(32)~~ which controls at least the setting of ~~said~~the micromirror matrix unit ~~(16)~~.

16. (currently amended) An optical system according to claim 15, wherein the control unit ~~(32)~~ is also arranged to control the sensing of the first sensor unit ~~(18)~~, ~~such~~ so that the first sensor unit ~~(18) is sensed~~senses at a plurality of occasions per second and wherein the control unit (32) is ~~arranged to between these sensing occasions~~ operable to control the micromirror matrix unit (16) between the sensing occasions so ~~such~~ that it is not in ~~said~~the first state.

17. (currently amended) An optical system according to claim ~~15 or~~ 16, further comprising means for detecting if the optical system is exposed to scanning or

destroying radiation, wherein the control unit ~~(32)~~ is arranged to control the micromirror matrix unit ~~(16) such~~so that ~~said~~the first state is avoided when ~~said~~said the detecting means has detected scanning or destroying ~~such~~ radiation.

18. (currently amended) An optical system according to claim 17, wherein the control unit ~~(32)~~ is arranged to, when ~~said~~the means has detected ~~such~~ scanning or destroying radiation, control the micromirror matrix unit ~~(16) such~~so that it reflects ~~said~~the incident electromagnetic radiation which reaches the micromirror matrix unit ~~(16)~~ from the first optical unit ~~(10) such~~ so that ~~this~~ the electromagnetic radiation reaches the second sensor unit ~~(26)~~.

19. (currently amended) An optical system according ~~any of the claims 15-18~~to claim 18, wherein the control unit ~~(32)~~ is arranged to individually control ~~the~~ a setting of the mirror elements of the micromirror matrix unit ~~(16) in such a manner~~so that ~~the~~ an amount of electromagnetic radiation which is reflected by the micromirror matrix units ~~(16)~~ towards the first sensor unit ~~(18)~~ is controlled by the setting of the mirror elements of the micromirror matrix unit ~~(16)~~.

20. (cancelled)

21. (cancelled)

22. (new) A target-seeking system comprising an optical system comprising a first optical unit and a first sensor unit for sensing electromagnetic radiation, wherein the optical system is arranged such that incident electromagnetic radiation that originates from a scene outside of the optical system can reach the first sensor unit by passing via the first optical unit and by following a beam pathfrom the first optical unit to the first sensor unit, wherein the optical system further comprises a micromirror matrix unit, which comprises a plurality of micromirror elements and which is arranged in the beam path, wherein the micromirror matrix unit is operable to be set in at least a first and a second state, wherein in the first state the micromirror matrix unit reflects the incident electromagnetic radiation which reaches the micromirror matrix unit from the first optical unit so that the electromagnetic radiation reaches the first sensor unit, wherein in the second state the micromirror matrix unit reflects the incident electromagnetic radiation which reaches the micromirror matrix unit from the first optical unit so that the electromagnetic radiation does not reach the first sensor unit.

23. (new) A target-seeking system according to claim 22, wherein the target-seeking system is a target-seeking missile.